

Longest Increasing Subsequence

time limit per test: 1 second (3 seconds for Python)
memory limit per test: 500 megabytes
input: standard input
output: standard output
points: 100 · problem code: lis

You are given a sequence of integers. A subsequence is formed by deleting zero or more elements without changing the order of the remaining elements.

Find the length of the longest subsequence whose values are strictly increasing.

Input

The first line contains an integer n , the length of the sequence.

The second line contains n integers: $a_1, a_2, \dots, a_n$.

Output

Print one integer: the length of the longest strictly increasing subsequence.

Constraints

- $1 \leq n \leq 5000$
- $-10^9 \leq a_i \leq 10^9$

Example 1

Input

```
8
10 9 2 5 3 7 101 18
```

Output

```
4
```

Explanation

One longest increasing subsequence is 2, 3, 7, 101.

Example 2

Input

```
5
5 4 3 2 1
```

Output

```
1
```

Example 3

Input

```
6
2 2 2 2 2 2
```

Output

1